



National Transportation Safety Board Aviation Accident Final Report

Location:	Brownwood, TX	Accident Number:	DFW05LA117
Date & Time:	05/09/2005, 0955 CDT	Registration:	N972NR
Aircraft:	Rockwell International NA-265-80	Aircraft Damage:	Substantial
Defining Event:		Injuries:	5 None
Flight Conducted Under:	Part 91: General Aviation - Business		

Analysis

During the takeoff roll, the left engine of the twin-turbo fan engine jet ingested a bird into the first stage compressor blades. The 4,120-hour captain reported that just after V₁, the flight crew and passengers heard a loud bang followed by the airplane swerving to the left. The captain aborted the takeoff roll. Subsequently, the airplane overran the departure end of the 5,599-foot asphalt runway. Examination of the engine revealed foreign object damage to five first stage compressor blades. A residue was also found on the damaged blades. Small organic fibers, that appeared to be from a bird, were found throughout the second stage turbine nozzle and on the combustion chamber mating flange. Continuity was established throughout the engine and accessory gearbox.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The loss of engine power due to damage to the first stage compressor by a foreign object (bird).

Findings

Occurrence #1: ON GROUND/WATER COLLISION WITH OBJECT

Phase of Operation: TAKEOFF - ROLL/RUN

Findings

1. (F) OBJECT - BIRD(S)

Occurrence #2: LOSS OF ENGINE POWER(PARTIAL) - MECH FAILURE/MALF

Phase of Operation: TAKEOFF - ROLL/RUN

Findings

2. (C) 1 ENGINE

3. (C) COMPRESSOR ASSEMBLY, STATOR VANE - FOREIGN OBJECT DAMAGE

Occurrence #3: OVERRUN

Phase of Operation: TAKEOFF - ABORTED

Occurrence #4: ON GROUND/WATER COLLISION WITH OBJECT

Phase of Operation: TAKEOFF - ABORTED

Findings

4. OBJECT - TREE(S)

5. OBJECT - FENCE

Factual Information

On May 9, 2005, approximately 0955 central daylight time, a twin-turbo fan Rockwell International NA-265-80 transport airplane, N972NR, registered to and operated by Compass Acquisitions and Development, Inc., of Dallas, Texas, was substantially damaged when it overran the departure end of Runway 17 during an aborted takeoff following a loss of engine power at the Brownwood Regional Airport (BWD), near Brownwood, Texas. The airline transport rated captain, commercial pilot acting as the first officer, and three passengers were not injured. Visual meteorological conditions prevailed and an instrument flight rules (IFR) flight plan was filed for the Code of Federal Regulations Part 91 business flight. The 805-nautical mile cross-country flight was originating at the time of the accident with an intended destination of Mesquite, Nevada.

The 4,120-hour captain reported in the Pilot/Operator Aircraft Accident Report (NTSB Form 6120.1/2) that after receiving an IFR clearance, they taxied onto Runway 17 (a 5,599-foot long by 150-foot wide asphalt runway), and applied takeoff power. The captain stated that during the takeoff roll both engines were "performing correctly." Just after the first officer announced that the airplane had reached the "V1," the flight crew and passengers heard a "loud bang" followed by the airplane swerving to the left. The captain added that he immediately aborted the takeoff due to "rapidly losing directional control," and applied thrust reversers while keeping the airplane "as centered on the runway as possible." Subsequently, the airplane overran the departure end of the runway, impacting a fence and trees, before crossing a road and coming to rest upright within a freshly plowed field, approximately 1,300 feet beyond the departure end of Runway 17. As the flight crew and passengers evacuated the airplane, they observed fuel leaking from the area of the left wing.

The 1978-model airplane was powered by two General Electric (GE) CF700 series turbo-fan engines.

The airplane was equipped with a Fairchild Model A100 cockpit voice recorder (CVR), serial number 4852. The CVR was shipped to the NTSB Laboratories in Washington, D.C., for further examination. The flight in question was recorded; however, the recording was found to be of very poor quality and unserviceable for accident investigation purposes.

Examination of the airplane by an Federal Aviation Administration (FAA) inspector who responded to the site of the accident, revealed that both leading edge wing slats were damaged. Evidence of continuous un-interrupted braking was observed on the runway, through the overrun area, across a roadway, and just short of the final resting place of the airplane.

At 1005, the automated weather observation system at BWD was reporting wind from 200 degrees, visibility 10 statute miles, an overcast ceiling at 900 feet, temperature 63 degrees Fahrenheit, dew point 61 degrees Fahrenheit, and an altimeter setting of 29.94 inches of Mercury.

On May 26, 2005 and May 27, 2005, the engine was disassembled and examined at the facilities of Best Jet, located near Denison, Texas, under the supervision of an NTSB representative. Continuity was established throughout the engine and accessory gearbox. Fuel was observed within the low pressure inlet fuel filter and fuel control unit. All fuel nozzles were absent of debris. Residue was found on the inlet frame assembly and five of the first stage

compressor blades, which were bent and deformed on the blade tips. Five of the first stage turbine vanes were slightly bent on the outboard tips. Dust was observed throughout the engine. Small organic fibers, that appeared to be from a bird, were found on the combustion chamber mating flange and throughout the second stage turbine nozzle.

Pilot Information

Certificate:	Airline Transport	Age:	36, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane	Toxicology Performed:	No
Medical Certification:	Class 1 With Waivers/Limitations	Last FAA Medical Exam:	12/01/2004
Occupational Pilot:		Last Flight Review or Equivalent:	12/01/2004
Flight Time:	4210 hours (Total, all aircraft), 1558 hours (Total, this make and model), 3260 hours (Pilot In Command, all aircraft), 127 hours (Last 90 days, all aircraft), 41 hours (Last 30 days, all aircraft)		

Co-Pilot Information

Certificate:	Airline Transport	Age:	41, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane Single-engine; Instrument Airplane	Toxicology Performed:	No
Medical Certification:	Class 1 With Waivers/Limitations	Last FAA Medical Exam:	01/01/2004
Occupational Pilot:		Last Flight Review or Equivalent:	01/01/2005
Flight Time:	2020 hours (Total, all aircraft), 177 hours (Total, this make and model), 1670 hours (Pilot In Command, all aircraft), 123 hours (Last 90 days, all aircraft), 32 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Rockwell International	Registration:	N972NR
Model/Series:	NA-265-80	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	380-065
Landing Gear Type:	Retractable - Tricycle	Seats:	10
Date/Type of Last Inspection:	03/01/2005, Continuous Airworthiness	Certified Max Gross Wt.:	23000 lbs
Time Since Last Inspection:	62 Hours	Engines:	2 Turbo Fan
Airframe Total Time:	7160.6 Hours at time of accident	Engine Manufacturer:	General Electric
ELT:	Installed, not activated	Engine Model/Series:	CF700-2A2
Registered Owner:	COMPASS ACQUISITIONS & DEVELOPMENT INC	Rated Power:	4500 lbs
Operator:	COMPASS ACQUISITIONS & DEVELOPMENT INC	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	BWD, 1387 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	1005 CDT	Direction from Accident Site:	0°
Lowest Cloud Condition:	Thin Overcast / 900 ft agl	Visibility	10 Miles
Lowest Ceiling:	Overcast / 900 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	200°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.94 inches Hg	Temperature/Dew Point:	17° C / 16° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Brownwood, TX (BWD)	Type of Flight Plan Filed:	IFR
Destination:	Mesquite, NV	Type of Clearance:	IFR
Departure Time:	0955 CDT	Type of Airspace:	

Airport Information

Airport:	Brownwood Regional Airport (BWD)	Runway Surface Type:	Asphalt
Airport Elevation:	1387 ft	Runway Surface Condition:	Dry
Runway Used:	17	IFR Approach:	None
Runway Length/Width:	5599 ft / 150 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:	3 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	5 None	Latitude, Longitude:	31.793611, -98.956389

Administrative Information

Investigator In Charge (IIC):	Alexander Lemishko	Report Date:	09/13/2005
Additional Participating Persons:	Frank Gentile; Federal Aviation Administration; Fort Worth, TX		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).